Remarks

Claims 1-32 are pending in the application. Claims 7-9, 3, 14, and 26-32 are withdrawn from consideration. Claims 1-6, 10-12 and 15-25 stand rejected.

Rejections under 35 U.S.C. §102(b)

(a) Claims 1, 3-4,15,17-18, 20 and 25 stand rejected under 35 U.S.C. §102(b) as being anticipated by WO 91/13552 to Tate. Claim 1, as amended specifically requires the composition to include the element, "at least one emulsifier," and further requires the composition to be capable of forming an emulsion upon mixing with water. Applicant respectfully submits that currently amended claim 1 and its dependent claims overcome the current rejections because the Tate formulations lack the required element, the at least one emulsifier, required by Applicant's claim 1 and each of the pending dependent claims. The Tate formulation similarly lacks the functionality of being capable of forming an emulsion upon mixing with water. Tate's compositions do not include an emulsifier, nor are they necessary because he teaches that his formulations generally involve solutions. At page 6, last full paragraph, Tate discusses the problems avoided by only including soluble components.

(b) Claims 1, 3-5, 15, 18, 20 and 25 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,143, 718 to Shalom, B.D. For the same reason noted above for the rejections based on Tate, amended claim 1 and its dependent claims overcome the current rejections because the Bar-Shalom reference does not teach any formulations having at least one emulsifier, and further fails to teach an emulsion upon being mixed with water. Currently amended claim 1 and each dependent claim rejected as being anticipated by Bar-Shalom specifically require at least on emulsifier and the functionality of being capable of forming an emulsion upon mixing with water.

Rejections under 35 U.S.C. §103(a)

Claims 1-6, 10-12 and 15-25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,246,716 to Sedun et. al, in view of U.S. Patent No. 5,741,502 to Roberts, J.R. Applicant respectfully maintains that the Office Action has failed to provide any basis or motivation for one skilled in the art to make the combination cited. A proper basis or motivation for making the combination is particularly important in view of the clear teaching in Roberts that making the combination is not necessary and by Sedum et al. that

the fungicide's phytotoxicity can be increased by increased levels of metal cation and fatty acid anion, a likely result of adding an acid buffer to his formulation.

Roberts teaches an adjuvant to be added to a pesticide to "...enhance or modify the chemical and/or physical characteristics of certain pesticides." (col. 1, lines 22-24) At col. 3, lines 50-53, Roberts lists a third optional component of his adjuvant as"

> ...optionally (3) a buffering agent in an amount sufficient to reduce the pH to below about 7. The buffering function could be performed by some of the oil or surfactant components.

Roberts further identifies candidates for his optional buffer at col. 6, lines 51-67 through col. 7, lines 1-3. Possible buffers include citric acid, glutaric acid, gluconic acid, lactic acid, glycolic acid, acrylic acid, and generally C_1-C_6 carboxylic and dicarboxylic acids.

As noted above, the optional buffer is useful, when needed, to reduce the pH of the resulting pesticide formulation. As explicitly stated by Roberts at col. 3, lines 15-17, "The buffering agent is not necessary if the oil and/or surfactant can reduce the pH of the compositon to below about 7."

Why it's sometimes important to reduce or otherwise maintain the pH at or below 7 is further explained by Roberts at col. 2, lines 10-12 and col. 2, lines 51-54, respectively:

> Some applications require the separate addition of buffering agents to adjust the pH of alkaline waters used to make up the spray solutions. The buffering agents regulate solution pH *to avoid hydrolysis of pesticides* that tend to decompose in alkaline spray solutions. (Emphasis added)
>
> Even after the addition of alkaline water and pesticides, use of this composition reduces and/or maintains the pH of the spray mixture within a desired range *to prevent hydrolysis of the pesticide*. (Emphasis added)

Roberts provides no other reason for adding the optional buffer to the adjuvant composition except to lower and maintain the resulting spray solutions at a pH sufficiently low to avoid hydrolysis of the pesticide. One skilled in the art of pesticides, having read Roberts would understand that nothing is to be gained by adding the optional buffer to a composition that is not susceptible to hydrolysis.

The Sedum reference teaches a fungicidal composition that can include a fatty acid, but that is lacking an organic carboxylic acid that is different from the fatty acid required. However, Sedum fails to identify any issues or problems with the hydrolysis of any components in his

compositions when subjected to alkaline conditions. One skilled in the art of pesticides generally understands that fatty acids are generally stable to basic conditions and that their basic salts can be made, isolated, and maintained as aqueous solutions without the risk of hydrolysis. Were this not the case, Robert's buffer based on carboxylic acids would be subject to hydrolysis when combined with alkaline spray solutions, making the buffer unsatisfactory. One skilled in the art would further understand that fungicides described by Sedum would not be expected to benefit by the addition of a buffer to maintain an acidic pH. The only expected change resulting from adding a buffer to the Sedum formulations would be an increase in its cost and in its corrosive properties. One skilled in the art of pesticides understanding Robert's explicit teaching would find no reason to combine Roberts with Sedum et al.

In fact, adding an acidic buffer to the Sedum fungicide would, according to Sedum et al. increase the phytotoxicity of the fungicide. At col. 6, lines 5-12, Sedum et al. indicates the following:

> The low solubility in water of the fatty acid metal salts also contributes to the low phytotoxicity of the formulation. Low phytotoxicity is essential for the composition as it is applied to plants in order to kill pathogenic fungi, or to prevent their infestation of the plant. Compositions which are phytotoxic as well as fungicidal are not desirable.

Dissolution of the metal salt of a fatty acid provides a metal cation and a fatty acid anion, causing phytotoxicity. The addition of an acid buffer to the composition taught by Sedum et al. provides a proton that can compete for the metal ion in the metal salt liberating both a metal cation and the fatty acid. The fatty acid will be in equilibrium with a fatty acid anion and a proton. These are the components (a metal cation and a fatty acid anion) that Sedum et al. teaches should be avoided. One skilled in the art of pesticides would understand that not only is the addition of an acidic buffer to the Sedum et al. formulation not called for, it will also increase the composition's phytotoxicity by forming the metal cation and fatty acid anion.

Motivation for combining Sedum et al. and Roberts provided by Office Action

According to the Office Action:

> One of ordinary skill also would have been motivated to utilize a salt of fatty acid in combination with an organic carboxylic acid, i.e. glycolic acid, because the organic carboxylic acid can act as an adjuvant and used in fungicidal compositions for adjusting the composition's pH, as taught by Roberts, J.R.

First, the organic carboxylic acid taught in Roberts is an optional component (buffer) in the adjuvant taught therein, not an adjuvant alone. Second, Roberts clearly teaches, as noted above, that a buffer is only needed to protect a pesticide subject to alkaline hydrolysis. No evidence has been provided to show that fatty acids are subject to alkaline hydrolysis. Applicant believes that fatty acids and their salts are not subject to alkaline hydrolysis.

(b) Had a prima facie case of obviousness been presented, the showing of an unexpected results overcomes the obviousness rejection

Applicant's combination of a fatty acid and a different carboxylic acid defined in claim 1 has provided unexpected superior fungicidal properties compared to a fatty acid alone or a carboxylic acid alone. Several sets of comparison data is provided, in Tables 4-7 and 9, that demonstrate that the combination of a fatty acid (caprylic acid) and another carboxylic acid (glycolic acid) provide substantially greater protection against a common fungus than the fatty acid alone or the carboxylic acid alone.

According to *In re Soni*:

> One way for a patent applicant to rebut a *prima facie* case of obviousness is to make a showing of "unexpected results," i.e., to show that the claimed invention exhibits some superior property or advantage that a person of ordinary skill in the relevant art would have found surprising or unexpected. The basic principle behind this rule is straightforward – that which would have been surprising to a person of ordinary skill in a particular art would not have been obvious. The principle applies most often to the less predictable fields, such as chemistry, where minor changes in a product or process may yield substantially different results. *In re Soni*, 54 F.3d at 750, 34 USPQ2d at 1687.

Further according to MPEP 2145, 3rd paragraph:

> Rebuttal evidence may include evidence of "secondary considerations," such as "commercial success, long felt but unsolved needs, [and] failure of others." *Graham v. John Deer Co.*, 383 U.S. at 17, 148 USPQ at 467. See also, e.g., *In re Piasecke,* 745 F.2d 1468, 1473, 223 USPQ 785, 788 (Fed. Cir. 1984) (commercial success). *Rebuttal evidence may also include evidence that the claimed invention yields unexpectedly improved properties or properties not present in the prior art. Rebuttal evidence may consist of a showing that the claimed compound possesses unexpected properties. Dillon*, 919 F.2d at 692-93, 16 USPQ2d at 1901... (Emphasis Added)

In rejecting Applicant's arguments regarding unexpected results, the Office Action indicated that "(t)he arguments are not persuasive because the features upon which applicant relies (a synergistic effect) are not recited in the rejected claim 1. Although the claim is

interpreted in light of the specification, limitations from the specification are not read into the claim(s)." The Office Action provides no basis for this conclusion in either a rule, a court decision or otherwise. Applicant respectfully believes the Examiner's position is clearly in conflict with the case law and MPEP rules cited above. When properly viewed in terms of the Patent Office's rules and relevant court decisions, the unexpected superior efficacy demonstrated in Applicant's specification for Applicant's claimed combination of a fatty acid and a second organic carboxylic acid different from the fatty acid (along with the additional elements of claim 1) is believed to overcome a prima facie case of obviousness, had one been provided.

It should be understood that the above remarks are not intended to provide an exhaustive basis for patentability or concede the basis for the rejections in the Office Action, but are simply provided to overcome the rejections made in the Office Action in the most expedient fashion.

Claims 1-6, 10-12 and 15-25 are currently pending in this application and have been rejected for the reasons discussed above. In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is requested to allow claims 1-6, 10-12, and 15-25 and pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the undersigned representative by telephone.

Respectfully submitted,

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